

1653  
HHS  
PCP

DT03 Rec'd PCT/PTO 22 NOV 2004 (09-04)

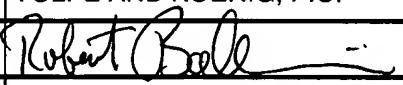
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>TRANSMITTAL FORM</b> <b>NOV 22 2004</b> <small>(to be used for all correspondence after initial filing)</small>		Application Number <b>10/507,434</b>  Filing Date <b>September 14, 2004</b>  First Named Inventor <b>Bjorn H. Lindqvist</b>  Art Unit <b>1653</b>  Examiner Name <b>Not Yet Known</b>
Total Number of Pages in THIS Submission		Attorney Docket Number <b>ZNA-PT007</b>

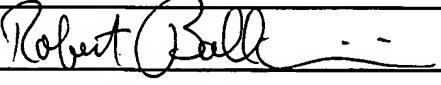
<b>ENCLOSURES (Check all that apply)</b>		
<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached  <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s)  <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input checked="" type="checkbox"/> Information Disclosure Statement  <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers  <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please Identify below):  Form PTO-1449; Copy of PCT International Search Report; and Copies of 19 References Cited Thereon
<b>Remarks</b>		

#### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	VOLPE AND KOENIG, P.C.		
Signature			
Printed name	Robert J. Ballarini		
Date	11/18/04	Reg. No.	48,684

#### CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature			
Typed or printed name	Robert J. Ballarini	Date	11/18/04

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

10 Rec'd PCT/PT 22 NOV 2004  
PATENT

NOV 22 2004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the **PATENT APPLICATION** of:

Bjørn Lindqvist

**Application No.:** 10/507,434

**Confirmation No.:** 6406

**Filed:** September 14, 2004

**For:** METHODS FOR PEPTIDE AND  
PROTEIN DISPLAY IN NUCLEIC ACID  
ARRAYS

**Group:** 1653

**Examiner:** Not Yet Known

Our File: ZNA-PT007

Date: November 18, 2004

**INFORMATION DISCLOSURE STATEMENT**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Further to Applicant's Duty of Disclosure pursuant to 37 C.F.R. §1.56, Applicant wishes to bring to the Examiner's attention the material cited on the enclosed PTO-1449 form.

Pursuant to Pre-Official Gazette Notice signed July 11, 2003 waiving the requirements under 37 C.F.R. § 1.98(a)(2)(i) for applications filed after June 30, 2003, copies of the cited U.S. documents have not been included. Copies of all other cited references are enclosed.

Pursuant to 37 C.F.R. § 1.97(e)(1), the undersigned certifies that items AA, AC and AD contained in this Information Disclosure Statement were cited in an

**Applicant:** Bjørn Lindqvist  
**Application No.:** 10/507,434

International Search Report, copy enclosed, in a corresponding International Application.

It is respectfully requested that the Examiner consider these documents and return an initialed copy of the PTO-1449 form indicating his consideration of the cited materials.

Respectfully submitted,

By Robert Ballarini  
Robert J. Ballarini  
Registration No. 48,684  
(215) 568-6400

Volpe and Koenig, P.C.  
United Plaza, Suite 1600  
30 South 17th Street  
Philadelphia, PA 19103

RJB/pp  
Enclosures (19)

10 REED PTO/PTO 22 NOV 2004

Sheet 1 of 3

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT NOV 22 2004 (Use several sheets if necessary)		ATTY. DOCKET NO. ZNA-PT007		SERIAL NO. 10/507,434			
		APPLICANT Bjørn Lindqvist					
		FILING DATE September 14, 2003		GROUP 1653			
		U.S. PATENT DOCUMENTS					
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION
	AA	WO 9831700	07/1998	PCT			YES      NO
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
	AB	US 2002 0172968 A1 Nov. 21, 2002 Liu et al., "Biochips Comprising Nucleic Acid/Protein Conjugates"					
	AC	Smith GP, "Filamentous Fusion Phage: Novel Expression Vectors That Display Cloned Antigens on the Virion Surface", Volume 228, 1985, pages 1315-1317					
	AD	Ichiro Tabuchi et al., "An in vitro DNA virus for in vitro protein evolution", FEB Letters, Volume 508, 2001 pages 309-312					
	AE	Cahill, D. Protein arrays: a high-throughput solution for proteomics research? Proteomics: A Trends Guide. (2000) July, 47-51					
EXAMINER				DATE CONSIDERED			

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



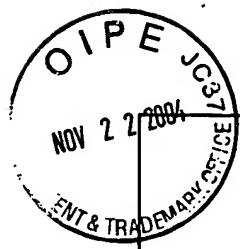
FORM PTO-1449  U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE  INFORMATION DISCLOSURE STATEMENT BY APPLICANT  (Use several sheets if necessary)		ATTY. DOCKET NO. ZNA-PT007	SERIAL NO. 10/507,434
		APPLICANT Bjørn Lindqvist	
		FILING DATE September 14, 2003	GROUP 1653

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	AF	Chattoraj and Inman. Location of DNA Ends in P2, 186, P4 and Lambda Bacteriophage Heads. J. Mol. Biol. (1974) 87, 11-22.
	AG	Davis, R.W., Simon, M. and N. Davidson. Electron Microscope Heteroduplex Methods for Mapping Regions of Base Sequence Homology in Nucleic Acids. In: Methods in Enzymology, (1971) Vol. 21, Part D, 414-428.
	AH	DeWildt, R.M., Mundy, C.R., Gorick, B.D. and I.M. Tomlinson. Antibody arrays for high-throughput screening of antibody-antigen interactions. Nat. Biotechnology (2000) 18 989-994.
	AI	Dunn, I.S. Assembly of Functional Bacteriophage Lambda Virions Incorporating C-Terminal Peptide or Protein Fusions with the Major Tail Protein. J. Mol. Biol. (1995) 248, 497-506.
	AJ	Dunn, I.S. Total modification of the bacteriophage lambda tail tube major subunit protein with foreign peptides. Gene (1996) 183, 15-21.
	AK	Irving, R.A. and P. Hudson. Proteins emerge from disarray. Nat. Biotechnology (2000) 18, 932-933.
	AL	Lindqvist, B.H. and S. Naderi. Peptide presentation by bacteriophage P4. FEMS Microbiol. Rev. (1995) 17, 33-39.
	AM	MacBeath, G. and S.L. Schreiber. Printing Proteins as Microarrays for High-Throughput Function Determination. Science (2000) 289, 1760-1763.
	AN	Maruyama I.N., Maruyama H.I., and S. Brenner. Lambda foo: A Lambda phage vector for the expression of foreign proteins. Proc Natl Acad Sci USA (1994) Aug. 16; 91 (17): 8273-7.
	AO	Mikawa, Y.G., Maruyama I.N., and S. Brenner. Surface Display of Proteins on Bacteriophage Lambda Heads. J. Mol. Biol. (1996) 262, 21-30.
	AP	Mitchell, P. A perspective on protein microarrays. Nature Biotechnol. (2002) 20, 225-229.
	AQ	Roberts, R.W. and J.W. Szostak. RNA-peptide fusions for the <i>in vitro</i> selection of peptides and proteins. Proc Natl Acad Sci USA, 1997 Nov 11; 94(23): 12297-302.

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



FORM PTO-1449  U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE  INFORMATION DISCLOSURE STATEMENT BY APPLICANT  (Use several sheets if necessary)		ATTY. DOCKET NO. ZNA-PT007	SERIAL NO. 10/507,434
		APPLICANT Bjørn Lindqvist	
		FILING DATE September 14, 2003	GROUP 1653

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	AR	Sternberg, N. and R. H. Hoess. Display of peptides and proteins on the surface of bacteriophage Lambda. Proc. Nat. Acad. Sci (USA) (1995) 28, 1609-1613.
	AS	Thomas, J.O. Chemical Linkage of the Tail to the Right-hand End of Bacteriophage Lambdo DNA. J. Mol. Biol. (1974) 87, 1-9.

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.